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APPLICATION NUMBER	FILING DATE	GRP ART UNIT	FIL FEE REC'D	ATTY. DOCKET NO	DRAWINGS	TOT CLAIMS	IND CLAIMS
60/224,150	08/10/2000		75		6		

Technical Marketing Associates Inc  
206 West 140th Street  
Los Angeles, CA 90061



## FILING RECEIPT



\*OC000000005514651\*

Date Mailed: 10/30/2000

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## Applicant(s)

Hiroshi Niwa, Los Angeles, CA ;

## Continuing Data as Claimed by Applicant

## Foreign Applications

If Required, Foreign Filing License Granted 10/28/2000

\*\* SMALL ENTITY \*\*

## Title

Concept, method, and apparatus for application of aloe vera to textile fibers and yarns

## Preliminary Class

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SEP 09 2002  
TC 1700

Data entry by : SNEED, LISA

Team : OIPE

Date: 10/30/2000

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This is a request for filing a PROVISIONAL APPLICATION FOR PATENT under 37 CFR 1.53 (c).

INVENTOR(S)					
Given Name (first and middle [if any])		Family Name or Surname		Residence (City and either State or Foreign Country)	
Hiroshi		Niwa		Los Angeles, CA	
<input type="checkbox"/> Additional inventors are being named on the _____ separately numbered sheets attached hereto					
TITLE OF THE INVENTION (280 characters max)					
CORRESPONDENCE ADDRESS					
Direct all correspondence to:					
<input type="checkbox"/> Customer Number		<input type="text"/>		Place Customer Number Bar Code Label here	
OR					
<input checked="" type="checkbox"/> Firm or Individual Name		Technical Marketing Associates, Inc.			
Address		206 West 140th Street			
Address					
City		Los Angeles	CA State	(310)	ZIP 90061
Country		USA	Telephone	323-1981	Fax 516-8168
ENCLOSED APPLICATION PARTS (check all that apply)					
<input checked="" type="checkbox"/> Specification Number of Pages		<input type="text"/>		<input checked="" type="checkbox"/> Small Entity Statement	
<input checked="" type="checkbox"/> Drawing(s) Number of Sheets		<input type="text"/>		<input type="checkbox"/> Other (specify) <input type="text"/>	
METHOD OF PAYMENT OF FILING FEES FOR THIS PROVISIONAL APPLICATION FOR PATENT (check one)					
<input checked="" type="checkbox"/> A check or money order is enclosed to cover the filing fees				FILING FEE AMOUNT (\$)	
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The invention was made by an agency of the United States Government or under a contract with an agency of the United States Government.					
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Respectfully submitted,

SIGNATURE Hiroshi Niwa

Date 8/10/00

TYPED or PRINTED NAME Hiroshi Niwa

REGISTRATION NO.

TELEPHONE (310) 323-1981

Docket Number:

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**(37 CFR 1.9(f) & 1.27(c))—SMALL BUSINESS CONCERN**

Docket Number (Optional)

Applicant, Patentee, or Identifier: Technical Marketing Associates, Inc.  
Application or Patent No.: \_\_\_\_\_  
Filed or Issued: \_\_\_\_\_  
Title: \_\_\_\_\_

I hereby state that I am

- ☐ the owner of the small business concern identified below.  
☒ an official of the small business concern empowered to act on behalf of the concern identified below.

NAME OF SMALL BUSINESS CONCERN Technical Marketing Associates, Inc.

ADDRESS OF SMALL BUSINESS CONCERN 206 West 140th Street  
Los Angeles, CA 90061

I hereby state that the above identified small business concern qualifies as a small business concern as defined in 13 CFR Part 121 for purposes of paying reduced fees to the United States Patent and Trademark Office. Questions related to size standards for a small business concern may be directed to: Small Business Administration, Size Standards Staff, 409 Third Street, SW, Washington, DC 20416.

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- ☐ the specification filed herewith with title as listed above.  
☒ the application identified above.  
☐ the patent identified above.

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Each person, concern, or organization having any rights in the invention is listed below:

- ☐ no such person, concern, or organization exists.  
☒ each such person, concern, or organization is listed below.

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NAME OF PERSON SIGNING Hiroshi Niwa

TITLE OF PERSON IF OTHER THAN OWNER President

90061

ADDRESS OF PERSON SIGNING 206 West 140th Street, Los Angeles, CA

SIGNATURE Hiroshi Niwa

DATE 8-10-000

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# **Concept, Method, and Apparatus for Application of Aloe Vera to Textile Fibers and Yarns**

## **Applicant**

Technical Marketing Associates, Inc.

## **Background/Summary**

The application of aloe vera solution to textile fibers and yarns is heretofore a singularly new concept to apply said solution to textile fibers and yarns. The benefits and advantages that accrue to applying the said solution to textile fibers and yarns in the apparatuses developed and yarns in particular are manifested in a softer and smoother finished yarn with the benefits of having aloe vera solution in the textile yarns.

It is the objective of the invention of the apparatuses developed and designed to apply aloe vera solution to textile yarns in a method that is continuous and uniformly applied in a quick, compact yarn treatment system in the most efficient manner.

It is another objective that the choice of where to develop apparatuses in order to apply the aloe vera solution was critically determined by the most efficacious points to uniformly apply the said solution in the most effective locations in the production line.

It was another objective that the textile fibers and yarns be treated in the most linear path in order that the application of the aloe vera solution be delivered in most uniform method, resulting in a smoother yarn.

## **Drawings/Descriptions**

Figure 1 shows the fiber stretch break machine in its entirety. The first apparatus is mounted on the portion marked "A" in figure 1. Figure 2 shows the aloe reservoir tank and aloe pump connected to the apparatus on the stretch break machine. Figure 3 shows the tube containing the aloe vera solution connected and mounted above the two rollers. The first apparatus is located immediately after the continuous filament fiber has been stretch broken into smaller, discrete fiber lengths. The two rollers arranged top and bottom are running continuously to pull the fiber into a storage can. Before the fiber is put into the storage can, the top roller is applying the aloe vera solution to the fiber in the following method- a reservoir filled with the aloe vera solution is maintained next to the fiber stretch breaking machine, a tube connects the reservoir to an electrically operated pump that runs in a continuous mode. The pump can be set to run at varying speeds. The pump's tube is then situated above the top roller, where the aloe vera solution is metered onto the roller, and the fiber passing through the roller will be impregnated with the aloe vera solution. This initial application of the said solution is the first pass that imparts the textile fibers with a softening effect on the fibers. The precise metering of the solution is critical since a) inconsistent application of said solution will lead to inconsistent quality fiber, b) over-application or under-application of said solution will lead to significant

impairment of the fiber-into-yarn (i.e., spinning) process. The application of the aloe vera solution in a continuous method is critical to the consistent quality of the spinning process.

Figure 4-A shows the continuous steam bulker in its entirety. Figure 4-B has a close-up of the second apparatus mounted atop the continuous steam bulker. Figure 5-A again has the continuous steam bulker in its side view, with Figure 5-B with a  $\frac{3}{4}$  view of where the second apparatus is attached to the bulker. The apparatus, which is comprised of a metal tank, measuring 42 inches long, 6 inches wide, and 5 inches deep, is placed on the feeding rack at the end of the bulking machine. The metal cylindrical roller, is placed into this tank so that its round surface will come into contact with the textile yarns. The metal cylindrical roller is connected via a series of chains and cams/gears to an electric motor which drives the roller to varying speeds, depending on the type of textile yarn that is being run through the continuous steam bulker. The tank is filled with the aloe vera solution; as the metal cylindrical roller revolves in the tank, its leading round surface is constantly being replenished with a consistent and uniform amount of aloe vera solution. Figure 6-A shows the side view of the aloe vera feeder bottle that sits atop the metal tank; it feeds the metal tank with gravity feed method. Figure 6-B shows how the motor is connected to the metal cylindrical roller and drives the various cams/gears that determines the rate of revolutions per minute for the metal cylindrical roller.

The objective of our placement and method of application immediately after the continuous bulking machine results in the most uniformly consistent application of aloe vera solution, and the application of said solution in a linear fashion to textile yarns. The aloe vera solution is contained in a reservoir after the textile yarn has exited the continuous bulking machine. A roller that runs the width of the bulking machine is set up with variable gearing that is connected to the shaft which runs the continuous steamer. Each textile yarn, depending on the characteristics it possesses, will determine the gearing that is used on the apparatus that delivers aloe vera solution onto the textile yarn. After application of the aloe vera solution in a continuous method, the yarn will have consistent and uniform application and thus will be treated in the optimal method. This concept of applying aloe vera solution to textile yarns, the method, and apparatuses invented is the first in textile applications. The benefits that accrue to using such a method are numerous, with improved texture, softness, and feeling of textile products, in both semi-finished and finished forms.